



Docket No.: YHK-007

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

Re Application of

Young Sang BAEK, Yu Soong KIM,
Seong Jin KIM and Kyong Soek KIM

Serial No.: 09/137,842

Confirm. No.: 3333

Filed: August 21, 1998

For: DISPLAY APPARATUS FOR NOTEBOOK COMPUTER

REPLY BRIEF UNDER 37 C.F.R. §1.193

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Sir:

This is a Reply Brief submitted in response to the Examiner's Answer mailed February 18, 2004 in the above-identified application. This Reply Brief is filed within two months of the date of the Examiner's Answer and is submitted in triplicate.

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Issue 1. A *prima facie* case of obviousness was not established in the rejection of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over "Applicants Admitted Prior Art" (AAPA) in view of Godfrey et al. (U.S. Patent No. 5,736,973).

Applicants expressly maintain and incorporate previous arguments made including the September 22, 2003 Supplemental Appeal Brief. In addition, Applicants provide the following remarks.

The teaching or suggestion to make the modification or combination of prior art and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). There must be particular findings as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge to the claimed invention to combine or modify references. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). Conclusory statements cannot be relied up for particular combinations of prior art and specific claims. *In re Lee*, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Claim 7 recites a display apparatus comprising a panel module and a module control board. The panel module includes drivers mounted on a display panel that drives a pixel matrix. The module control board has a timing control unit for driving the drivers and a back light unit driver for driving the back light unit of the panel module.

A. **The disclosure in the present application** in the "Description of the Prior Art" section of the present application (hereafter "AAPA") discloses a panel module 22 including a timing control circuit chip in a timing control board 16 and a separate back light driver 26. See at least Figure 1 of the Description of the Prior Art. Thus, the timing control circuit chip of the timing control board 16 and the back light driver 26 disclosed in the AAPA are located on two different circuit boards separated from each other.

On page 2, Item 2, lines 8-10 of the Examiner's Answer, it is stated that "...AAPA discloses everything with the exception that the timing control unit and backlight driver is integrated into a printed circuit board..."

Godfrey et al. relates to an integrated backlight display system for a personal digital system. However, unlike the recitations of claim 7, Godfrey et al. does not does not show a module control board having a timing control unit for driving drivers and a back light unit driver for driving a back light unit of a panel module.

Godfrey et al. does disclose a housing 12 of the PDA 10 confines a processor and memory of the computer and a battery power supply for the computer within its interior. The LCD screen 14 is also a conventional touch sensitive screen, which allows information to be supplied to the computer of the PDA 10. See column 4, lines 5-7 and 13-16 of Godfrey. Godfrey et al. does disclose the backlighting system of the present invention is also located within the housing 12 where the stylus 16 is normally stored. See column 4, lines 51-53 and 65-67 of Godfrey. Godfrey does disclose the PCB 24 is additionally attached or incorporated in

the PDA to provide a display backlighting system in a PDA under circumstances where none was originally incorporated. See column 4, lines 46-49 and column 2, lines 22-33 of Godfrey.

Applicants respectfully submit that Godfrey does not teach or suggest that the PCB 24 provides a main circuit board of the PDA or even a timing control circuit for drivers of the LCD screen 14. Godfrey does not teach or suggest that the PCB 24 is provided attached to the computer and memory of the PDA 10. Thus, the backlight driving circuit 22 is in a different PCB separated from the processor and memory of the computer of the PDA 10 in Godfrey.

Additionally, the backlight circuit 22 in Godfrey et al. includes an oscillator 64 that supplies switching signals 66 on conductors 68 and 70 to the bridge driver 56 to control the frequency of the AC waveform 58 applied to the electroluminescent film 36.” However, the oscillator is not a timing control unit for driving drivers, as recited in claim 7. See Figures 6 and 8 and column 4, line 8-column 5, line 17; column 6, lines 37-67 and claim 20 of Godfrey.

Accordingly, neither AAPA nor Godfrey et al. disclose, alone or in combination, a module control board having a timing control unit for driving the drivers and a back light unit driver for driving the back light unit of the panel module. At least for these reasons, a *prima facie* case of obviousness has not been established in the rejection of claim 7 under 35 U.S.C. § 103(a).

B. The Appellants respectfully submit that the disclosure of Godfrey et al. does not disclose the requisite suggestion or motivation to be modified or combined to teach or suggest the recitations of claim 7. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Page 4, lines 3-5 of the Examiner’s Answer asserts that “[i]t would have been obvious for one of

ordinary skill in the art to provide the printed circuit board of Godfrey et al. in the device of the AAPA because it would provide a compact and space efficient circuit for the system.” However, the Examiner offers no motivational statements disclosed in the applied prior art reference that would have motivated one with no knowledge to the claimed invention to combine or modify references to teach the recited module control board and combinations thereof. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). At best, Applicants respectfully submit Godfrey et al. and AAPA, individually or in combination disclose, a separate timing control board 16 and backlight driver 26. At least for the above reasons, a *prima facie* case of obviousness has not been established in the rejection of claim 7 under 35 U.S.C. § 103(a).

C. With respect to criticality, features of the present invention are provided to connect effectively the main board of the system body and the display portion with a display separated from each other. Applicants respectfully submit that configurations disclosed in preferred embodiments according to the present invention can reduce noise generated in the display, allow elements of a notebook computer and connections therebetween to be reduced in number, and an increase of the effective display screen area of a panel module is obtained. Further, the thickness of the display portion can be reduced.

In addition, Applicants respectfully submit an embodiment shown in Figure 4 of AAPA teaches away from the modification asserted in the Examiner’s Answer (integration) to reduce noise by adding circuits including scanning transmitter 40 and receiver 42 between a main printed circuit board and the timing control board 16.

Issue 2. *A prima facie* case of obviousness was not established in the rejection of claims 11 and 13-19 under 35 U.S.C. § 103(a) as being unpatentable over "Applicants Admitted Prior Art" (AAPA) in view of Moriconi (U.S. Patent No. 5,546,098).

Claims 11 and 13-19 recite a notebook computer comprising a display module and a body module. The display module comprises drivers that drive a display device. The body module comprises a main printed circuit board and a driving circuit mounted on the main printed circuit board that drives the drivers in the display module. The driving circuit is a module control board. The module control board also drives a back light unit. That is, the module control board drives the back light unit as well as the drivers in the display module. The notebook computer comprises a connecting circuit comprising a flexible printed circuit film that connects the drivers and the driving circuit.

A. The disclosure in the present application in the "Description of the Prior Art" section of AAPA discloses a panel module 22 including a timing control circuit chip in a timing control board 16 and a separate back light driver 26. See at least Figure 1 of AAPA. To reduce noise, a scanning transmitter 40 and scanning receiver 42 can be added as shown in Figure 4 of AAPA. Thus, the timing control board 16 and the back light driver 26 disclosed in AAPA are located on two different circuit boards separated from each other.

With respect to Moriconi, Applicants respectfully submit circuitry 47 in the display module must provide a signal indicating the display type to the display circuitry 41 for the display

circuitry to operate. Thus, Applicants respectfully submit Moriconi discloses display circuitry in both the display module 13 and body portion 19 that are separate from tabs 45 that include logic to activate bits in the display.

B. Further, as indicated in the Examiner's Answer (page 5, lines 3-5), Moriconi discloses that display circuitry (asserted to correspond to the timing control circuit) is located in a system body module different from a panel module. Thus, Moriconi fails to teach or suggest a circuit board, which is mounted with both a timing control unit and a back light driver and combinations thereof as recited in claim 11. At least for these reasons, a *prima facie* case of obviousness has not been established in the rejection of claims 11 and 13-19 under 35 U.S.C. § 103(a).

The Examiner's Answer admits that AAPA and Moriconi fail to disclose that a backlight driver is integrated in a printed circuit board with a timing control circuit and combinations thereof as recited. Applicants respectfully submit that the combined teachings of AAPA and Moriconi would result in a timing control board 16 and a backlight driver 26 located on two boards separated from each other.

The Appellants respectfully submit that the disclosure of Moriconi does not disclose the requisite suggestion or motivation for modification or combination to teach or suggest the recitations of claims 11 and 13-19. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner offers no motivational statements related to the recitation of a flexible printed

circuit film in claims 11 and 13-19. At least for these reason, a *prima facie* case of obviousness has not been established in the rejection of claims 11 and 13-19 under 35 U.S.C. § 103(a).

C. With respect to criticality, configurations disclosed in preferred embodiments according to the present invention allow elements of a notebook computer and connections therebetween to be reduced in number, and an increase of the effective display screen area of a panel module is obtained. Further, the thickness of the display portion can be reduced.

CONCLUSION

Appellants respectfully request the Board of Patent Appeal and Interferences to withdraw the rejections of claims 7, 11 and 13-19 for the foregoing reasons.

Respectfully submitted,
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